

## Claims:

1. (Currently Amended) A composition comprising a porous first material impregnated with a second material, said first material selected from the group consisting of ~~metal oxides and metal hydroxides~~ MgO, CeO<sub>2</sub>, AgO, SrO, BaO, CaO, FeO, V<sub>2</sub>O<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, Mn<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, NiO, CuO, ZnO, SiO<sub>2</sub>, Ag<sub>2</sub>O, and combinations thereof, and said second material selected from the group consisting of Ag, Hg, Au, Sn, Ga, In, and [[Pt]] and cations and oxides thereof.

2. (Canceled)

3. (Original) The composition of claim 1, said second material being a soft Lewis acid.

4. (Canceled)

5. (Previously Presented) The composition of claim 1, said first material having a pore volume of at least about 0.3 cm<sup>3</sup>/g and an average pore opening size of at least about 4 nm.

6. (Previously Presented) The composition of claim 5, said pore volume being at least about 0.8 cm<sup>3</sup>/g and said pore opening size being at least 8 nm.

7. (Previously Presented) The composition of claim 1, said first material having a surface area of at least about 100 m<sup>2</sup>/g.

8. (Currently Amended) A composite comprising a plurality of agglomerated nanocrystalline particles including a porous first material impregnated with a second material, said first material selected from the group consisting of metal oxides and metal hydroxides, and said second material selected from the group consisting of Ag, Hg, Au, Sn, Ga, In, and Pt and cations and

oxides thereof, said composite retaining at least about 25% of the total pore volume of said first material prior to agglomeration thereof.

9. (Previously Presented) The composite of claim 8, said first material selected from the group consisting of MgO, CeO<sub>2</sub>, AgO, SrO, BaO, CaO, TiO<sub>2</sub>, ZrO<sub>2</sub>, FeO, V<sub>2</sub>O<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, Mn<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, NiO, CuO, Al<sub>2</sub>O<sub>3</sub>, ZnO, SiO<sub>2</sub>, Ag<sub>2</sub>O, and combinations thereof.

10. (Original) The composite of claim 8, said second material being a soft Lewis acid.

11. (Canceled)

12. (Previously Presented) The composite of claim 8, said first material having a pore volume of at least about 0.3 cm<sup>3</sup>/g and an average pore opening size of at least about 4 nm.

13. (Previously Presented) The composite of claim 12, said pore volume being at least about 0.8 cm<sup>3</sup>/g and said pore opening size being at least 8 nm.

14. (Previously Presented) The composite of claim 8, said first material having a surface area of at least about 100 m<sup>2</sup>/g.

15. (Canceled)

16. (Original) The composite of claim 8, said composite being in the form of extruded pellets.

17. (Currently Amended) A composition composite comprising a plurality of agglomerated nanocrystalline particles ~~a member~~ selected from the group consisting of Gd<sub>2</sub>O<sub>3</sub>, In<sub>2</sub>O<sub>3</sub>,

SnO, Ga<sub>2</sub>O<sub>3</sub>•Al<sub>2</sub>O<sub>3</sub>, Ga<sub>2</sub>O<sub>3</sub>•In<sub>2</sub>O<sub>3</sub>, and In<sub>2</sub>O<sub>3</sub>•Al<sub>2</sub>O<sub>3</sub> and having an average particle size between about 3-30 nm, said composite retaining at least about 25% of the total pore volume of said particles prior to agglomeration thereof.

18. (Currently Amended) The ~~composition~~ composite of claim 17, said ~~composition~~ particles having a surface area between about 30-700 m<sup>2</sup>/g prior to agglomeration thereof.

19. (Currently Amended) The ~~composition~~ composite of claim 17, said ~~composition~~ particles having a pore volume of at least about 0.2 cm<sup>3</sup>/g and an average pore opening size of at least about 4 nm prior to agglomeration thereof.

20. (Previously Presented) A composite comprising a plurality of agglomerated nanocrystalline particles selected from the group consisting of Ga<sub>2</sub>O<sub>3</sub>, In<sub>2</sub>O<sub>3</sub>, and mixtures thereof, said composite retaining at least about 25% of the total pore volume of said particles prior to agglomeration thereof.

21. (Previously Presented) The composite of claim 20, said particles having a surface area between about 30-700 m<sup>2</sup>/g.

22. (Previously Presented) The composite of claim 20, said particles having a pore volume of at least about 0.2 cm<sup>3</sup>/g and an average pore opening size of at least about 4 nm.

23. (Original) The composite of claim 20, said composite being in the form of extruded pellets.

24-42. (Cancelled)

43. (Currently Amended) A composition comprising a porous first material impregnated with a second material, said first material selected from the group consisting of metal oxides and metal hydroxides, and said second material selected from the group consisting of ~~metals~~ and metal cations.

44. (Currently Amended) The composition of claim 43, said second material selected from the group consisting of cations of Ag, Hg, Au, Ni, Co, Cu, Sn, Ga, In, and Pt ~~and cations thereof~~.

45. (Previously Presented) The composition of claim 43, said first material having a pore volume of at least about  $0.3 \text{ cm}^3/\text{g}$  and an average pore opening size of at least about 4 nm.

46. (Previously Presented) The composition of claim 43, said first material selected from the group consisting of MgO, CeO<sub>2</sub>, AgO, SrO, BaO, CaO, TiO<sub>2</sub>, ZrO<sub>2</sub>, FeO, V<sub>2</sub>O<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, Mn<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, NiO, CuO, Al<sub>2</sub>O<sub>3</sub>, ZnO, SiO<sub>2</sub>, Ag<sub>2</sub>O, and combinations thereof.

47. (Currently Amended) A composite comprising a plurality of agglomerated nanocrystalline particles including a porous first material impregnated with a second material, said first material selected from the group consisting of metal oxides and metal hydroxides, and said second material selected from the group consisting of ~~metals and~~ metal cations, said composite retaining at least about 25% of the total pore volume of said particles prior to agglomeration thereof.

48. (Currently Amended) The composite of claim 47, said second material selected from the group consisting of cations of Ag, Hg, Au, Ni, Co, Cu, Sn, Ga, In, and Pt ~~and cations thereof~~.

49. (Previously Presented) The composite of claim 47, said first material having a pore volume of at least about  $0.3 \text{ cm}^3/\text{g}$  and an average pore opening size of at least about 4 nm.

50. (Previously Presented) The composite of claim 47, said first material selected from the group consisting of MgO, CeO<sub>2</sub>, AgO, SrO, BaO, CaO, TiO<sub>2</sub>, ZrO<sub>2</sub>, FeO, V<sub>2</sub>O<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, Mn<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, NiO, CuO, Al<sub>2</sub>O<sub>3</sub>, ZnO, SiO<sub>2</sub>, Ag<sub>2</sub>O, and combinations thereof.

51. (Previously Presented) The composite of claim 47, said composite being in the form of extruded pellets.